



January 5, 2024

Mr. Ryan Smith
Wastewater Division Manager
City of Watsonville
500 Clearwater Avenue
Watsonville, California 95076

Re: Scope of Work and Cost Estimate - Task Order 6 (TO-6)
Proposed Full-scale Soil and Groundwater Remediation and Related Tasks
Freedom Boulevard Offsite Area
Watsonville, California

Dear Mr. Smith:

Daniel B. Stephens & Associates, Inc. (DBS&A) has prepared this scope of work and cost estimate to assist the City of Watsonville regarding the Freedom Boulevard Offsite Area as described below. The proposed scope of work was developed in accordance with the Corrective Action Plan (CAP) approved by the Central Coast Regional Water Quality Control Board (Board) as described in their correspondence to the City dated July 5, 2022.

Scope of Work

The scope of work consists of the following tasks outlined and discussed in the CAP:

- Corrective Action Plan Update
- Permitting, Utility Clearance and Traffic Control
- Laurel Street Groundwater Treatment
- Broadis Street Soil Excavation
- Performance Monitoring
- Reporting

Corrective Action Plan Update

Per the request of the Central Coast Regional Water Quality Control Board (RWQCB), an update will be prepared to the Corrective Action Plan (CAP) dated January 17, 2022. The CAP update will describe the soil excavation and in-situ reagent injections planned for the Freedom Boulevard Offsite area. The CAP update will include a summary of the completed CAP tasks such as soil and groundwater sampling, passive flux meter (PFM) testing, and well replacement in addition to upcoming tasks.

Attachment 2
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The update will also detail the proposed excavation area at Broadis Street and proposed injection points along Laurel Street. The CAP update will be submitted to the RWQCB for review and approval before field work commences. An update to the existing Health and Safety Plan will also be prepared for the proposed CAP tasks.

Permitting, Utility Clearance and Traffic Control

Well PMW-2R will be removed during the planned excavation as described below. A well replacement permit application will be submitted to the Santa Cruz County Public Health before field work commences. Utility line clearance will be completed before field work commences using a specialty geophysical survey subcontractor. DigAlert will also be contacted for public utility line clearance. Traffic control plans will also be prepared and implemented to meet City requirements for work in the public streets.

Laurel Street Groundwater Treatment

Groundwater reagent injections will be completed along western Laurel Street according to the updated CAP. A series of approximately 23 injection points will be advanced between well MW-13 and MW-9 both orthogonal and parallel to the street. DBS&A will subcontract and supervise Regenesi[®] to provide a proprietary reagent mix consisting of liquid colloidal activated carbon (PlumeStop[™]), sulfidated microscale zero-valent iron (S-mZVI), and a consortium of dehalogenating bacteria (Bio-Dechlor Inolulum[®] Plus [BDI+]). The reagent will be delivered to the subsurface in a pre-specified mix (with city hydrant water) designed to degrade chlorinated volatile organic compounds (cVOCs) in groundwater. Regenesi will provide the reagent material, mixing equipment, injection equipment, and drilling subcontractor for the treatment injections. Each injection point will be asphalt patched to match existing grade (roadway surface).

Broadis Street Soil Excavation

The proposed soil excavation will focus on removing impacted soil detected in the Broadis Street area and a portion of the adjacent private parking lot to the north at 1200 Freedom Boulevard. Soil excavation will be completed to approximately 15 feet below grade (ft bgs) based on the soil data and the bucket reach of the excavator mobilized for the soil removal. The soil excavation area will extend to soil boring P-3 area in the north to the P-8 area in the south. The sewer line in the excavation area will either be shored in place or removed and replaced according to city specifications. A temporary sewer line bypass will be in place during the time the sewer line is inactive. Well PMW-2R and vapor probe VP-3, if needed, will also be removed with the excavator and replaced at a later date once the excavation is complete.

Post-excavation soil samples will be collected and analyzed to document soil quality around the perimeter of the excavation (floors and walls) and to guide additional excavation where possible. Soil samples will be analyzed on a 24-hour turnaround time (TAT) to allow field work to commence with minimal delay. Additional impacted soil will be excavated where possible and where detected by post-excavation soil samples. The total amount of soil removed is estimated for costing purposes at 425 tons.

The excavation area will be backfilled with clean, compacted or self-compacting imported fill. DBS&A will subcontract Regenesi[®] to provide a proprietary reagent mix to add to the backfill material to promote in-situ chemical reduction (ISCR) of residual chlorinated volatile organic compounds (cVOCs) in groundwater in the excavation area. The Regenesi reagent mix will consist of sulfidated microscale zero-valent iron (S-mZVI) and liquid activated micro-granular carbon (PlumeStop[™]). The reagent will be incrementally combined with the backfill material compacted into the excavation. The sidewalk, curb, and asphalt areas will be restored according to city specifications. The final excavation area will be surveyed for horizontal and vertical coordinates by a licensed California land surveyor.

Reporting

DBS&A will prepare a CAP implementation report to summarize the recent work, excavation tasks, injection activities, and analytical sampling results with related figures, tables, and appendices of analytical laboratory data and field records.

Closing

The estimated cost to complete the proposed scope of work is summarized in the attached Table 1. This is a time-and-materials estimated cost based on a current understanding of site conditions and required scope.

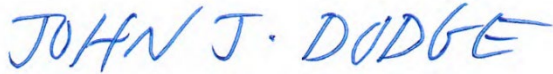
Our proposed scope of work will be completed according to our 2024 fee schedule and also includes additional as-needed services that are directed or requested as needed by the City, such as additional data review, meetings, travel, evaluations, field work, sampling, or related professional consulting services. DBS&A understands that additional work supplemental to the scope described above may be requested by the City, as needed, and additional cost estimates may be prepared to complete additional work as needed. As-needed services will be completed under a separate General Consulting task.

Please authorize our services by signing below, submitting a purchase order, or other authorization. Thank you for the opportunity to support the City of Watsonville. If you have any questions, please contact John Dodge at (714) 747-9456.

Mr. Smith
January 5, 2024
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Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.



John J. Dodge, PG
Principal Hydrogeologist



James A. Kelsey
Principal Geologist
President

Task Order TO-6 Authorization

Name/Title

Signature/Date

Table 1. Cost Estimate
City of Watsonville, CA
Task Order TO-5

TASK:			Corrective Action Plan Update		Field Tasks						Reporting				Project Management		TOTAL						
					Laurel Street Groundwater Treatment		Broadis Street Soil Excavation		Performance Monitoring (Baseline + 30, 60, 90, 120 days) (Sync 2x w-SA Events)		Laurel Street		Broadis Street										
Labor			No. Field Days:		5		5		3														
STAFF CATEGORY			RATE (\$/hr)		Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost					
Principal Professional I			JJD	\$ 280	50	\$ 14,000	32	\$ 8,960	50	\$ 14,000	8	\$ 2,240	40	\$ 11,200	50	\$ 14,000	24	\$ 6,720	254	\$ 71,120			
Project Professional I			HE	\$ 199	32	\$ 6,368	40	\$ 7,960	60	\$ 11,940	16	\$ 3,184	32	\$ 6,368	40	\$ 7,960	\$ -	\$ -	220	\$ 43,780			
Staff Professional II			HH	\$ 155		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -	\$ -	0	\$ -			
Staff Professional I			SG	\$ 139	16	\$ 2,224	60	\$ 8,340	60	\$ 8,340	60	\$ 8,340	50	\$ 6,950	50	\$ 6,950	\$ -	\$ -	296	\$ 41,144			
Sr. Technical Editor/Assistant			RF	\$ 152		\$ -		\$ -		\$ -		\$ -	2	\$ 304	2	\$ 304	\$ -	\$ -	4	\$ 608			
CADD/GIS			LC	\$ 130	16	\$ 2,080	16	\$ 2,080		\$ -		\$ -	24	\$ 3,120	24	\$ 3,120	\$ -	\$ -	80	\$ 10,400			
Labor Subtotal					114	\$ 24,672	148	\$ 27,340	170	\$ 34,280	84	\$ 13,764	148	\$ 27,942	166	\$ 32,334	24	\$ 6,720	854	\$ 167,052			
Expenses																							
	MARKUP	UNIT FEE	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost			
	0%																						
Misc Safety Supplies/week		\$ 25		\$ -	1	\$ 25	5	\$ 125											6	\$ 150			
Field vehicle miles/RT		\$ 0.64		0	740	474	740	474	2,220	1,421									3700	\$ 2,368			
Field hotel (onsite staff)		\$ 175		0	5	875	9	1,575											14	\$ 2,450			
Field vehicle (onsite staff)		\$ 125		0	2	250	4	500											6	\$ 750			
Airline flight		\$ 250			2	500	2	500											4	\$ 1,000			
Permitting																			0	\$ -			
RWQCB WDR permit N/A																			0	\$ -			
City permits N/A																			0	\$ -			
county well permit-estim		\$ 500					1	500											1	\$ 500			
Subtotal				\$ -		\$ 2,124		\$ 3,674		\$ 1,421		\$ -		\$ -		\$ -		\$ -		\$ 7,218			
Subcontractors																							
	MARKUP	UNIT FEE	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost			
	7%																						
Spectrum																			0	\$ -			
Utility clearance quote 7/7/23 Inj/Excav areas		\$ 5,372			0.5	\$ 2,686	0.5	\$ 2,686											1	\$ 5,372			
																			0	\$ -			
Traffic Control Mgt (TMI)																			0	\$ -			
update quote 11/13/23		\$ 1,100			0.5	\$ 550	0.5	\$ 550											1	\$ 1,100			
Field implementation quote (~10 days) 11/16/23		\$ 28,045			0.4	\$ 10,787	0.615	\$ 17,258											1	\$ 28,045			
																			0	\$ -			
Calscience																			0	\$ -			
CAP Analyte List (11 wells+dup/event)*5 events=60 samples																			0	\$ -			
quote 57017726 11/10/23-Post Inj GW Monitoring		\$ 30,120							1	\$ 30,120									1	\$ 30,120			
Post-X Soils 24 hr TAT-quote 11/14/23		\$ 180					25	\$ 4,500											25	\$ 4,500			
																			0	\$ -			
Field Env Equip																			0	\$ -			
PID per week/each (2 onsite for excavation)		\$ 255					4	\$ 1,020											4	\$ 1,020			
																			0	\$ -			
Regensis																			0	\$ -			
Laurel St quote 7/5/22; PlumeStop, BDI+, S-mZVI		\$ 210,135			1	\$ 210,135													1	\$ 210,135			
Broadis St 10/26/2023-ZVI backfill, 5 ft TTZ		\$ 27,195					1	\$ 27,195											1	\$ 27,195			
Broadis St 10/26/2023-ZVI backfill, 10 ft TTZ		\$ 45,396																	0	\$ -			
Freedom Blvd quote-HOLD		\$ 407,687																	0	\$ -			
																			0	\$ -			
Cascade Drilling																			0	\$ -			
PMW-2R2 Replacement-quote 11/21/23		\$ 10,300					1	\$ 10,300											1	\$ 10,300			
																			0	\$ -			
Land Surveyor-Calvada																			0	\$ -			
Inj pts/excavation areas/manholes/well		\$ 5,700					1	\$ 5,700											1	\$ 5,700			
																			0	\$ -			
Belshire Env Mgt																			0	\$ -			
drums per event pickup/T&D		\$ 200							15	\$ 3,000									15	\$ 3,000			
																			0	\$ -			
Blaine Tech Svcs-GW Sampling																			0	\$ -			
quote 11/10/23; 5 post-inj events		\$ 2,930							5	\$ 14,650									5	\$ 14,650			
Torrent Lab dropoff OK																			0	\$ -			
																			0	\$ -			
American Integrated Services Inc (AIS)																			0	\$ -			
Excavation Proposal 12/8/23		\$ 361,900					1	\$ 361,900											1	\$ 361,900			
																			0	\$ -			
Field contingency	5.0%					\$ 11,208		\$ 21,555		\$ 2,389		\$ -		\$ -		\$ -		\$ -		\$ 35,152			
Subtotal				\$ -		\$ 235,365		\$ 452,665		\$ 50,159		\$ -		\$ -		\$ -		\$ -		\$ 738,189			
Markup				\$ -		\$ 16,476		\$ 31,687		\$ 3,511		\$ -		\$ -		\$ -		\$ -		\$ 51,673			
Subtotal w/markup				\$ -		\$ 251,841		\$ 484,351		\$ 53,670		\$ -		\$ -		\$ -		\$ -		\$ 789,862			
Task Total:				\$ 24,672		\$ 281,305		\$ 522,305		\$ 68,854		\$ 27,942		\$ 32,334		\$ 6,720				\$ 964,132			